DOCUMENT RESUME

ED 154 671 HE 009 942

AUTHOR	Melargano, Ralph J.; And Others
TITLE	Planned Variations Study. Volume II: Intervention Strategies for Secondary and Postsecondary Compensatory Education.
INSTITUTION	System Development Corp., Santa Monica, Calif. Studies and Evaluation Dept.
SPONS AGENCY	Office of Education (DHEW), Washington, D.C.
REPORT NO	TM-5857/002/00
PUB DATE	31 Jan 78
CONTRACT	300-76-0539
NOTE	56p.; For related documents see HE 009 941-946
EDRS PRICE	MF-$0.83 HC-$3.50 Plus Postage.
DESCRIPTORS	*Change Strategies; *Compensatory Education; Culturally Disadvantaged; *Disadvantaged Youth; Economically Disadvantaged; Educationally Disadvantaged; *Intervention; Models; Post Secondary Education; *Program Development; Secondary Education
IDENTIFIERS	*Special Services for Disadvantaged Students; *Upward Bound

ABSTRACT

System Development Corporation conducted an extensive project of conceptualization and planning of models for compensatory educational intervention for older disadvantaged youth. This volume treats the two intervention strategies developed to provide the framework for comprehensive compensatory education projects at the secondary and postsecondary levels for the Upward Bound and Special Services for Disadvantaged Students programs. (MSE)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

System Development Corporation

ED154671

PLANNED VARIATIONS STUDY

INTERVENTION STRATEGIES FOR SECONDARY AND POSTSECONDARY COMPENSATORY EDUCATION

VOLUME II

U S DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

JANUARY 31, 1978

NE009412

TM-5857/002/00

System Development Corporation

PLANNED VARIATIONS STUDY

INTERVENTION STRATEGIES FOR SECONDARY AND POSTSECONDARY COMPENSATORY EDUCATION

VOLUME II

JANUARY 31, 1978

TM-5857/002/00

PLANNED VARIATIONS STUDY

VOLUME II: INTERVENTION STRATEGIES FOR SECONDARY AND POSTSECONDARY COMPENSATORY EDUCATION

Ralph J. Melaragno
Patrice E. Metro
John R. Shiban

Studies and Evaluation Department
System Development Corporation

January 31, 1978

TM-5857/000/02

The work on which this publication is based was performed pursuant to Contract 300-76-0539, as amended, with the U.S. Office of Education, Department of Health, Education, and Welfare. Views or conclusions contained in this study should not be interpreted as representing the official opinion or policy of the Department of Health, Education, and Welfare.

CONTENTS

	Page
INTRODUCTION	1
Purpose	2
Procedures Followed	3
DETERMINING STUDENT OBJECTIVES	5
Analysis of Federal Regulations	5
Analysis of the Target Population	7
Objectives for the Secondary and Postsecondary Levels	10
DETERMINING PROJECT COMPONENTS	17
Secondary Level Intervention Strategy	18
Postsecondary Level Intervention Strategy	34
USES FOR THE INTERVENTION STRATEGIES	49
Developing a New Project	49
Modifying an Existing Project	49
Developing Theory-Based Models	50
Evaluating Intervention Programs	50

INTRODUCTION

During the period of September 1, 1976, through January 30, 1978, System Development Corporation (SDC) conducted an extensive planning effort under a contract with the U.S. Office of Education (USOE). Called the Planned Variations Study, a major dimension of the project involved the conceptualization and planning of models for compensatory educational intervention at the secondary and postsecondary levels. The project also included the planning of a longitudinal evaluation of the models, incorporating the design of an evaluation and analytic procedures to be used, the methodology for executing an evaluation study in a variety of field settings, and the selection of appropriate instrumentation to determine the effects of models on participating students.

The genesis for the Planned Variations Study arose from earlier evaluations of two programs operated by the Bureau of Higher and Continuing Education (BHCE), the Upward Bound program for secondary students and the Special Services program for postsecondary students. Based on the results of these earlier evaluations, which had indicated that both Upward Bound and Special Services were achieving certain of their objectives but could benefit from the development of alternative models, the Office of Planning, Budgeting and Evaluation (OPBE) contracted with SDC to carry out the planning activities outlined above.

In the 17 months of the Planned Variations Study, SDC performed the following tasks, each of which is described in a separate report:

- Developed two intervention strategies for compensatory education projects to meet the unique needs of disadvantaged secondary and postsecondary students.
- Developed the design of a longitudinal study to evaluate the effects of models growing out of the two intervention strategies, along with analytic procedures to answer the issues to be addressed in such a study.

- Developed a field implementation plan for a longitudinal study, by which intervention models could be implemented in a variety of settings and data collected as called for in a longitudinal study design.
- Developed a set of recommendations for instruments to measure student outcomes in a longitudinal evaluation, based on an analysis of available measures in the cog[illegible]tive and affective domains.
- Developed an index of components of existing projects and a system for regularly adding to and maintaining the index.

The present report treats the two intervention strategies developed by SDC. These strategies were designed to provide the framework for comprehensive compensatory education projects at the secondary and postsecondary levels; as such, they are strategies for projects funded by BHCE for the Upward Bound and Special Services programs. As will be described subsequently, the two intervention strategies are based on the needs of disadvantaged secondary and postsecondary students and include the critical components of a project that is to be implemented to meet those needs.

PURPOSE

There is a twofold purpose for the preparation of general intervention strategies for secondary and postsecondary compensatory education. The first is conceptual in nature, to determine the fundamental characteristics of compensatory education projects. The second is more pragmatic, to provide guidance to individuals concerned with initiating or modifying intervention projects in the field.

Within the broad field of educational research and development, there is an ongoing interest in determining the approaches to follow for compensatory programs. Contemporary literature on compensatory education demonstrates vividly this concern to delineate the programmatic requirements for successful intervention in the schooling of disadvantaged students. This is reflected quite well by the attempts to understand the critical elements

of such compensatory programs as Head Start and Follow Through. To a lesser extent, the recent evaluations of Title I of the Elementary and Secondary Education Act and of the Emergency School Aid Act include efforts at discovering program services that are effective with students. Yet, little complementary work has been done with educational intervention at the secondary and postsecondary levels; here, much less is known about the composition of projects that will lead to students' achievement of program objectives. Given the paucity of information on secondary and postsecondary interventions that could be productive in realizing the goals of programs like Upward Bound and Special Services, the intervention strategies developed by SDC will likely be quite useful to educational researchers, evaluators, and developers involved with secondary and postsecondary efforts.

However, educators about to begin or already involved with a secondary or postsecondary project cannot wait for the results of research and evaluation studies to provide them with guidance on the specific services to include in a project. Hundreds of Upward Bound and Special Services projects now exist and more will start up in the immediate future, and the practitioners who are responsible for the projects have a current need for assistance in either beginning a project or modifying one. For these practitioners, the intervention strategies SDC has developed can be very valuable in making decisions about the particular components to include in a project, given both the underlying legislation for the programs and the needs of disadvantaged students.

PROCEDURES FOLLOWED

SDC followed a three-step process in developing the two intervention strategies. The first step involved determining student objectives to be realized by an intervention project. This was accomplished by (a) an analysis of the federal regulations for Upward Bound and Special Services, which delineate the disadvantagements to be overcome by the programs, and (b) an analysis of the needs of students in the target populations for Upward Bound and Special Services. In the second step, SDC specified the project components required to achieve the student objectives previously defined. This step involved a

logical analysis of the objectives and a systematic determination of project components that would be directly relevant to the achievement of the objectives. For the third step, SDC prepared detailed descriptions of the duration, intensity, and resources required for implementation of the components in the context of Upward Bound and Special Services regulations. In the succeeding sections of this report, the three steps outlined above are presented in detail.

DETERMINING STUDENT OBJECTIVES

A compensatory education intervention program is intended to serve the specific needs of disadvantaged students. The development of strategies for educational intervention requires, as a first step, the determination of student-level objectives to be realized by the intervention. In developing its intervention strategies for secondary and postsecondary education, SDC satisfied this requirement by following a three-step sequence in which the federal regulations for Upward Bound and Special Services were analyzed to determine the disadvantagements of participating students, then the Target Population Analysis report was examined to identify the needs of eligible students and, finally, precise student-level objectives were prepared.

Information in the federal regulations and the Target Population Analysis report formed the primary sources for the objectives. In addition, four other sources were used: (1) suggestions to the SDC staff from consultants who have had considerable experience with compensatory education programs for older youth; (2) advice from members of two panels of experts assisting the SDC staff, where both panels included individuals who are presently or in the recent past did direct compensatory projects; (3) recommendations from personnel representing two agencies of the U.S. Office of Education (the Office of Planning, Budgeting, and Evaluation, and the Bureau of Higher and Continuing Education); and (4) the expertise of SDC personnel who have backgrounds in the development and evaluation of compensatory education programs.

ANALYSIS OF THE FEDERAL REGULATIONS

The most recent regulations for Upward Bound and Special Services were analyzed to determine the disadvantagements for students participating in each program (see Federal Register, May 24, 1977, Part II). Material quoted below refers to Parts 155 and 157 of Title 45 of the Code of Federal Regulations for Upward Bound and Special Services, respectively.

Regarding Upward Bound, two sections of the regulations address disadvantagements. They are as follows:

> 155.1 "Services provided under this program are designed to assist in enabling youths from low-income families who have academic potential, but who may lack adequate secondary school preparation, who may be physically handicapped, or who may be disadvantaged because of severe rural isolation, to enter, continue, or resume programs of postsecondary education. Projects under this program shall generate skills and motivation necessary for success in education beyond high school."
>
> 155.4 An individual is eligible for Upward Bound if the individual "...has academic potential but is unlikely to apply for admission to, or be accepted for enrollment in, an institution of postsecondary education because of lack of preparation, or underachievement, or both, in secondary school."

From these two sections, it was concluded that the following disadvantagements apply to Upward Bound: comes from a low-income family, and lacks preparation for postsecondary education and/or is underachieving in high school, is physically handicapped, or comes from severe rural isolation.

There are two sections of the Special Services regulations pertinent to disadvantagements:

> 157.1 "Services under this program are designed to assist in enabling youths from low-income families who have academic potential, but who may lack adequate secondary school preparation, who may be physically handicapped, or who may be disadvantaged because of severe rural isolation, to enter, continue, or resume programs of postsecondary education. (Services are for students who)...by reason of deprived educational, cultural, or economic background, or physical handicap, or limited English-speaking ability, are in need of such services to assist them to initiate, continue, or resume their postsecondary education. The goal of the program...shall be to increase the retention and graduation rates of such students."
>
> 157.3 "A student is eligible to participate...if such student...is an individual with academic potential who demonstrates a need for the remedial and special services...as a result of a deprived educational, cultural or economic background, or a physical handicap, or is an individual with

academic potential with a limited English-speaking ability who is in need of bilingual education, teaching, guidance, and counseling in order to successfully pursue postsecondary education."

Analysis of these two sections yielded the following disadvantagements applicable to the Special Services program: deprived educationally, or deprived culturally, or deprived economically, or physically handicapped, or limited English-speaking ability, or severe rural isolation.

When these two sets of disadvantagements were considered in terms of their potential import for the development of intervention strategies, particularly with respect to available information on students now served by Upward Bound and Special Services projects, it was evident that three disadvantagements applied to relatively few students and required specialized services from an intervention project: physical handicap, severe rural isolation and limited English-speaking ability. Difficulties in defining precisely these disadvantagements, and considerations of the small number of students qualifying for Upward Bound and Special Services under these disadvantagements, resulted in USOE deciding not to focus on them. Accordingly, student-level objectives for program participants who are eligible because of these three disadvantagements were not prepared. Disadvantagements that were considered in developing student-level objects were as follows:

Upward Bound. Comes from low-income family, and lacks preparation for postsecondary education and/or is underachieving in high school.

Special Services. Deprived educationally, or deprived culturally, or deprived economically.

ANALYSIS OF THE TARGET POPULATION

SDC performed an analysis of students eligible for participation in the Upward Bound and Special Services programs (Target Population Analysis Report, June 1, 1977). Of particular interest in this analysis was the collection of information

on the needs of disadvantaged youth. No new data on the target population could be collected; accordingly, the analysis utilized only information previously obtained, and available. One primary source of information for the Target Population Analysis (TPA) was the National Longitudinal Study of the High School Class of 1972 (NLS), which provided data relevant to the needs of disadvantaged students.

In producing the TPA, SDC used two samples from the NLS data base. The first sample was the best available for representing the Upward Bound-eligible students since criteria for selecting students included low family income and low rank in class. By using these criteria, the selected students were reasonable approximations of the target population for Upward Bound. The second sample was the best available for representing Special Services-eligible students because this sample was composed of those students from the first sample who subsequently reported that they were attending some institution of postsecondary education.

While the data on the secondary-level students (the first sample) is useful in describing their needs, the data for the postsecondary-level students (the second sample) is only moderately useful. The major limitation on the data is that it was obtained while the students were seniors in high school; as such, it is difficult to be certain that the evidence for postsecondary students is accurate with respect to their needs while enrolled in a postsecondary institution. In the absence of any better data, SDC used this information from the TPA on postsecondary students to assist in its final determination of needs and objectives.

Classes of Information

Guided by the disadvantagements previously identified through analysis of the federal regulations for Upward Bound and Special Services, SDC used the data in the TPA to identify student needs. The particular data that were included were those relevant to the disadvantagements described earlier. The table on the next page cutlines information on student needs extracted from the Target Population Analysis.

Table 1. Disadvantagements and Data from the Target Population Analysis

UPWARD BOUND

Disadvantagement	TPA Data
Low Family Income	Student's need for money
	Student's part-time employment
Underachievement in High School	Student's high school grades
	Student's standardized test scores
Lack of Preparation for Postsecondary Education	Student's study habits
	Student's course of study
	Student's belief in academic ability
	Student's educational aspirations
	Parent attitudes toward education
	Influence of peers and friends on student
	Student's discussions with counselors

SPECIAL SERVICES

Disadvantagement	TPA Data
Econmic Deprivation	Student's part-time employment
Cultural Deprivation	Parent attitudes toward education
Educational Deprivation	Student's standardized test scores
	Student's study habits
	Student's belief in academic ability
	Student's educational aspirations
	Student's discussions with counselors

OBJECTIVES FOR THE SECONDARY AND POSTSECONDARY LEVELS

The specific objectives to be addressed by intervention programs at the secondary and postsecondary levels were determined on the basis of the information in the TPA relevant to student disadvantagements (outlined in the preceding table), and suggestions from project consultants, project advisory panel members, and personnel from USOE. The 15 secondary-level objectives and the 12 postsecondary-level objectives, with the rationale for each, are presented below.

Objectives for Disadvantaged Secondary Students

COGNITIVE

1. To improve cognitive skills in mathematics (arithmetic, algebra, and geometry) and language arts (reading speed, reading comprehension, vocabulary, grammar, and syntax).

Language arts and mathematics skills are critical for success in secondary and postsecondary education. Data in the TPA demonstrated that disadvantaged students have ACT English and mathematics scores below national norms (Tables VI-2 and VI-4*), and SAT verbal and quantitative scores below the national mean (Tables VI-6 and VI-7). The particular subskills included in this objective resulted from discussions with project consultants and members of project advisory panels.

2. To improve high school grades.

Students preparing for postsecondary education need to master the high school curriculum, and the degree of mastery is indicated by grades in courses. The TPA showed that 68% of the disadvantaged students earned grades of C or D (Table III-2). This objective then was clearly important for intervention strategy focus.

3. To develop study skills and habits.

A student's chances for success in postsecondary education are greatly enhanced if the student possesses well-developed study skills and habits. The TPA demonstrated

---

*Tables referenced can be found in Target Population Analysis Report. System Development Corporation, June, 1977.

that more than half of the disadvantaged students believe that poor study habits on their part interfered with their education (Table VI-14). An important objective for intervention assistance would necessarily focus on study skills and habits.

4. To increase enrollment in academic curricula.

Students who participate in an academic curriculum in high school are better prepared for postsecondary education. Data from the TPA (Table VI-16) showed that fewer than one third of the disadvantaged students are enrolled in an academic curriculum (the majority being enrolled in either general or vocational/technical curricula). Obviously, then, additional focus on academic curricula would be a prime objective.

AFFECTIVE OBJECTIVES

5. To improve self-perception of ability.

The TPA did not have evidence that disadvantaged students have poor perception of their own abilities to be successful in postsecondary education. Self-report items (Table VI-17) indicated that most disadvantaged students felt that they were capable of doing adequate work at the postsecondary level. However, consultants, advisory panelists, and USOE personnel urged that this objective be included arguing that low self-perception of ability was characteristic of disadvantaged students.

6. To improve motivation to achieve.

No definitive evidence was found in the TPA to support this objective; most disadvantaged high school students indicated an expectation to continue education beyond high school (Table VI-18). However, consultants, advisory panelists, and USOE personnel requested this objective be included in the SDC study on the grounds that students' actual behavior was inconsistent with the expectation to continue their education.

7. To develop the ability to cope with parental disinterest.

Parental attitudes and behavior can adversely affect the disadvantaged student's chances for success in education. Table VI-19 of the TPA showed that from 10 to 25% of the disadvantaged students (depending upon ethnic-group membership) believed that their parents discouraged them from postsecondary education, while

Table VI-20 demonstrated that more than one third of the disadvantaged students believed that a lack of parent interest interfered with their education. Since an intervention program cannot expect to materially influence parents themselves, this objective was cast in its current form to indicate that the program would attempt to assist students in coping with disinterested parents.

8. To reduce the negative influence of peers and friends.

Two tables in the TPA describe peer and friends influence on disadvantaged students. Table VI-24 indicated that more than half of the students believed that peers influenced their choice of high school program, and Table VI-26 showed that 70% or more of the students felt their friends influenced their plans for the future. Guided by suggestions from advisory panels, this objective was written to indicate that the program would focus on reducing any negative influence of peers and friends.

9. To develop positive attitudes toward project activities, the learning process, and further education.

Most compensatory education programs expect to generate positive attitudes on the parts of participating students. An intervention program with limited involvement of students, as in Upward Bound, cannot be expected to produce substantial changes in attitudes except toward the specific content of the intervention. Thus, this objective is concerned with attitudes that could be influenced by the intervention program. No evidence concerning this objective was identifiable in the TPA, but it is included because of its conventional consideration in compensatory programs.

10. To maintain a low level of project-related delinquent behavior: absences, tardiness, vandalism, and aggression toward peers and staff.

Several experts, notably the National Council on the Education of Disadvantaged Children, have suggested that the root causes of juvenile delinquency may be learning disorders acquired through conventional schooling. This objective was operationalized in terms of project-related behavior, since that is most amenable to influence in an intervention program.

11. To reduce the interference of work with high school education.

Three pieces of information in the TPA related to the effect of working on students' education. In Table VI-30, 23% of the disadvantaged students indicated they believed they would not go on to postsecondary education because they needed money; Table VI-31 showed that 20% of the students believed their job interefered with their education; and in Table VI-32, 29% of the students reported working 20 hours per week or more. From this information, an objective was constructed aimed at reducing the interference of work with the student's high school education.

CAREER

12. To develop an increased awareness of career posibilities.

This objective is not based on evidence from the TPA, but rather was recommended by an advisory panel. The rationale for its inclusion is that many disadvantaged students have minimal awareness of careers they might pursue, and the action that is necessary to enter them.

ADMINISTRATIVE

13. To maintain an adequate rate of acceptance to postsecondary education.

The regulations for Upward Bound state that programs should prepare and motivate students for postsecondary school admission. A reasonable objective was that an intervention project should at least maintain the rate of postsecondary acceptance now found in the Upward Bound program.

14. To identify vision and hearing impediments to learning.

The regulations for Upward Bound require this objective.

15. To provide frequent contact with a counselor regarding education.

In the TPA (Table VI-28), less than one-third of the disadvantaged students reported that they had often talked with a counselor about the future. Given the nature of the intervention program, it was determined that an administrative objective would be for participating students to have frequent contact with a counselor to talk about education.

Objectives for Disadvantaged Postsecondary Students

COGNITIVE

1. To improve cognitive skills in mathematics (arithmetic through algebra) and language arts (reading speed, reading comprehension, vocabulary, grammar and syntax).

Skills in language arts and mathematics are considered critical for success in postsecondary education. In the TPA, it was found that many disadvantaged students scored below the national mean on the ACT English and mathematics tests (Tables VII-2 and VII-3), and most of them scored below the national mean on the SAT verbal and quantitative tests (Tables VII-6 and VII-7). Entering postsecondary education with basic skill development at such a low level, disadvantaged students will be very likely to need assistance in improving their cognitive skills.

2. To maintain an acceptable GPA.

No evidence is available in the TPA regarding disadvantaged students' grade point averages in college. However, project consultants, project advisory panels, and USOE personnel indicated that students participating in Special Services projects typically experience difficulty with their college coursework; this objective was included to reflect those anecdotal reports.

3. To develop study skills and habits.

Being able to study effectively is considered important for success in postsecondary education. More than half of the disadvantaged students in the TPA reported that poor study habits interfered with their education (Table VII-15).

4. To develop awareness of available fields of study (majors).

The TPA did not contain information relevant to disadvantaged students' choice of fields of study in postsecondary education. The recommendation from persons familiar with this issue (consultants and advisory panelists) was that a career determination objective be included, since their observations were that

disadvantaged students found it difficult to decide on their major field of study in college.

AFFECTIVE

5. To develop the ability to cope with institutional bureaucracy.

Advice from experts (consultants and advisory panelists) was that disadvantaged students frequently have difficulty with the institutional requirements of postsecondary education (e.g., enrollment, registration for courses, changing courses). Based on this advice, an objective was prepared to assist students in coping with the bureaucracy of the institution. There is no evidence concerning this objective in the TPA.

6. To develop the ability to cope with parental disinterest.

In Table VII-19 of the TPA, many students (varying according to ethnic groups) indicated that a lack of parent interest interfered with their education. This objective is cast in the form above because it would not be possible to influence the behavior and attitudes of parents, but it would be possible within an intervention program to assist students in coping with parental disinterest.

7. To develop positive self-perception of ability.

A self-report item in the TPA (Table VII-17) showed that more than 60% of the disadvantaged students felt that they had the ability to succeed in college. However, this objective was included on the recommendation of project consultants and advisory panelists, who felt that it was more typical for disadvantaged students to have a low perception of their ability to do well in college.

8. To develop positive attitudes toward project activities, the learning process, and further education.

This objective reflects the standard expectation that compensatory education programs will influence participating students' attitudes regarding schooling. It was cast in its present form because there was little reason for feeling

that a limited intervention program (such as Special Services) could be expected to effect students in areas beyond those directly related to the program.

9. To maintain a low level of project-related delinquent behavior: absences, tardiness, vandalism, aggression toward peers and staff.

It has been suggested by, for example, the National Council on the Education of Disadvantaged Children, that learning disorders acquired through conventional schooling may be the root causes of juvenile delinquency. This objective was prepared to be concerned with project-related delinquent behavior, since that type could be most readily influenced by a student's participation in a project.

10. To improve motivation to achieve.

Evidence in the TPA does not support an objective concerned with motivation to achieve; on the contrary, Table VII-18 indicated that more than 90% of the disadvantaged students aspire to complete some form of postsecondary education. However, project consultants, advisory panelists, and USOE personnel noted that student behaviors are frequently different from this strong positive assertion, and recommended that this objective be included.

ADMINISTRATIVE

11. To provide frequent contact with a counselor regarding education.

In the TPA (Table VII-30), it was found that less than a third of the disadvantaged students reported that they had often discussed the future with a counselor. Since the program in question is educational in nature, this objective was prepared to specifically provide for discussions of education between partcipating students and counselors.

12. To provide assistance in obtaining financial aid.

In Table VII-32 of the TPA, 25% of the disadvantaged students reported that they had worked 20 or more hours per week. Since financial aid is available for disadvantaged college students, this administrative objective was determined to be a valid one.

DETERMINING PROJECT COMPONENTS

Following the specification of student objectives, the next major step was to determine the components that would be required by an intervention strategy to meet those objectives. This was accomplished through three tasks, as follows:

1. Assign objectives to the program requirements specified in the federal regulations.
2. Characterize and group all objectives in terms of common and discrete focuses (i.e., define major project components).
3. Describe each component by its essential attributes (i.e., the particular activities to achieve component objectives).

In the remaining portions of this report, the development of the intervention strategies for the secondary and postsecondary levels is described separately. That is, the three tasks outlined above are treated fully for the secondary level, then for the postsecondary level.

SECONDARY LEVEL INTERVENTION STRATEGY

As was indicated above, the first task was to assign student objectives to the program requirements specified in the federal regulations. The 15 objectives for secondary students are summarized in the table on the next page. Two sections of the federal regulations outline the features of an Upward Bound project, and the critical portions of those sections are quoted below.

> 155.5 "A summer residential component shall...provide to participants who have not completed secondary school, intensive basic skills development in those academic subjects required for secondary school graduation and postsecondary school admission; provide intensive postsecondary orientation and preparatory instruction to participants who have graduated from secondary school and who intend to enroll at a postsecondary institution in the academic term following the summer residential component; provide motivational activities through (i) individual guidance and counseling, and (ii) such activities as field trips to museums, educational institutions, theaters, and movies that have as their purpose the intellectual, social and cultural development of such students; provide a staff composed of (i) teachers from the target schools the partcipants are attending, (ii) postsecondary institutions from the host institution including graduate assistants, and (iii) other individuals with areas of specialization that will enhance the learning potential of the participants; provide tutor-counselors, that is, postsecondary school students who have demonstrated success in postsecondary education and who, preferably, have backgrounds similar to those of the participants; and provide such other services that have as their purpose the educational preparation of participants for postsecondary admissions, including assisting participants in the preparation of admissions and financial aid forms and where necessary ensuring that participants take national standardized tests required for postsecondary admission...During the academic year component a project shall provide to participants on a weekly basis individualized guidance, counseling and orientation in career opportunities and requirements for postsecondary education including preparation of admissions and financial aid applications and preparation for national standardized tests required for postsecondary admission, and either (i) academic instruction and tutoring within the context of courses being studied by the student at the secondary school or (ii) activities such as field trips to museums, educational institutions, theaters, and movies that have as their purpose the intellectual, social and cultural development of

Table 2. Objectives for Disadvantaged Secondary Students

1.	To improve cognitive skills in mathematics and language arts.
2.	To improve high school grades.
3.	To develop study skills and habits.
4.	To increase enrollment in academic curricula.
5.	To improve self-perception of ability.
6.	To improve motivation to achieve.
7.	To develop the ability to cope with parental disinterest.
8.	To reduce the negative influence of peers and friends.
9.	To develop positive attitudes toward project activites, the learnint process, and further education.
10.	To maintain a low level of project-related delinquent behavior.
11.	To reduce the interference of work with high school education.
12.	To develop an increased awareness of career possibilities.
13.	To maintain an adequate rate of acceptance to postsecondary education.
14.	To identify vision and hearing impediments to learning.
15.	To provide frequent contact with a counselor regarding education.

such students...provide such other activities that have as their purpose the educational preparation of participants for postsecondary admission."

155.9 "Utilize institutional and community resources to provide diagnostic health services to identify physical impediments to learning and to remedy those impediments."

Using the project features described above, student objectives were grouped under major requirements as follows (numbers refer to objectives in Table 2):

Basic skills development required for high school graduation and postsecondary education admission

Objectives: 1, 2, 3

Postsecondary orientation and preparatory instruction

Objectives: 9, 13

Motivational activities: individual guidance and counseling, cultural/ academic events

Objectives: 5, 6, 7, 8, 9, 10, 11, 13, 15

Career opportunities and requirements for postsecondary education

Objectives: 4, 9, 11, 12, 13

Instruction in the context of high school courses

Objectives: 4, 9, 11, 12, 13

Instruction in the context of high school courses

Objectives: 2, 3

Utilize resources to identify physical impediments to learning

Objective: 14

Completion of this task allowed for two conclusions to be drawn: (1) all project requirements described in the regulations are addressed by one or more student-level objectives; and (2) all student-level objectives previously specified logically related to one or more of the regulatory requirements. This provided justification for proceeding to the second task.

In the second task, objectives were examined again and grouped in terms of their focuses. That is, a second analysis of the objectives, as they were

assigned to project requirements, was performed with the goal of identifying the major components of an intervention strategy, with each component sharing a common focus that was unique from other components. This resulted in the formulation of the following intervention strategy components:

1. REMEDIAL LANGUAGE ARTS
   Objectives: 1, 2, 3

2. REMEDIAL MATHEMATICS
   Objectives: 1, 2, 3

3. SUPPORT FOR HIGH SCHOOL STUDY
   Objectives: 2, 3

4. ACADEMIC NEEDS ASSESSMENT
   Objectives: 1, 2, 3

5. INDIVIDUAL GUIDANCE AND COUNSELING
   Objectives: 4, 5, 6, 10, 11, 12, 13, 14, 15

6. POSTSECONDARY EDUCATION ORIENTATION
   Objectives: 9, 13

7. PERSONAL DEVELOPMENT
   Objectives: 5, 6, 7, 8, 9, 12, 13

Completion of the second task yielded a description of an intervention strategy for Upward Bound composed of seven major components. Each component contains a set of objectives to be achieved (in whole or in part) by that component. As is evident, some objectives are subsumed under more than one component, while other objectives are specific to a given component.

The third task consisted of describing each of the components by its essential attributes. That is, each component was subjected to a critical analysis to produce a description of the specific activities an Upward Bound project would provide to achieve the objectives of the component. The seven component descriptions are presented below.

Remedial Language Arts

The need for remedial language arts and mathematics instruction was evidenced by the data provided in the TPA as well as by expert opinion. Remedial mathematics and language arts were separated into two components so that students could work independently in either component, depending on a given student's needs assessment, and projects could be designed so that the operation of each component would depend solely on the requirements of its own participants. Furthermore, since the development of study skills is also needed by students in the Upward Bound target population, the teaching and practice of study skills was incorporated in both components.

The remedial language arts component has three objectives:

- to improve cognitive skills--reading speed, vocabulary, reading comprehension, grammar, syntax, spelling, and writing skills;
- to develop study habits related to language; and
- to improve grades as a by-product.

Participants in this component should be below grade level as evidence by a needs assessment. They may discontinue their participation once they attain grade level and are stable. The latter will be determined by regularly scheduled achievement testing and continuous needs assessment. Students may continue to receive support for their regular courses in the Support for High School Study component as long as needed.

In order to meet the needs of students participating in this component, the following characteristics are required for Remedial Language Arts:

- an initial needs assessment to identify and place students,
- the design of the component must allow for different entrance levels since students may vary sidely in achievement levels,
- ongoing needs assessment to evaluate and ensure student progress, and
- study skills should be incorporated in the instructional content to guarantee that students develop effective study techniques.

This component is strictly remedial. Students who need help with their course-work are attended to in the Support for High School Study Component.

Remedial Mathematics

The structure of the Remedial Mathematics component follows that of Remedial Language Arts. This component has three objectives:

- to improve cognitive skills--basic computation, algebra, and geometry;
- to develop study skills related to math; and
- to improve grades as a by-product.

Project participants who are below grade level in mathematics as evidenced by a needs assessment will participate in this component. Students will not be required to continue in the remedial component once they have attained grade level and have demonstrated stability in their achievement. The latter will be judged on the basis of regularly scheduled achievement testing and continuous needs assessment. Students may continue to get assistance, as needed, in the Support for High School Study component.

In order for the Remedial Mathematics component to meet its objectives, the component must have the following characteristics:

- an initial needs assessment is required to identify and place students,
- the design must allow for different entrance levels since students may be achieving at various grade levels,
- continuous needs assessment is required to evaluate and ensure student progress, and
- study skills must be incorporated in the materials used to remediate. (Each lesson or set of lessons should be designed so that necessary study skills are required steps.)

Support for High School Study

The Target Population Analysis found that eligible students receive poor grades. Additionally, the Upward Bound regulations require that projects provide intensive assistance in those academic subjects required for secondary school graduation and postsecondary admissions. Some project participants may not need remediation but only assistance in their coursework or preparation for future courses. The Support for High School Study component is designed to accommodate students who need additional help with current high school academic coursework, and/or support for future courses which are required or that the student wishes to take in preparation for postsecondary education.

The objectives of this component are:

- to improve grades in any needed subject area, and
- to develop study skills and habits.

Project participants who have "C" and below grades in any academic subject are referred to this component. Students may also request assistance.

The design of this component must include several characteristics:

- an initial needs assessment will be necessary to identify students,
- the component design must provide for instruction in a variety of subject areas and at different levels,
- continuous needs assessment procedures are required to ensure that participants are progressing,
- continuous needs assessment is required project-wide also to guarantee that students not participating in this component are maintaining adequate averages or are brought into the component, and
- study skills should be incorporated in all study.

Students who attain above "C" grades will no longer be required to participate in this component. They may, however, voluntarily continue.

Academic Needs Assessment

The remedial components and the support for coursework components dictate that initial needs assessment be performed. Therefore, an administrative component was designed to conduct an initial needs assessment which will accomplish student placement in the appropriate academic components and will also stipulate the level of placement. This component will assess needs in regard to the following:

- mathematics skills--basic computation, algebra, geometry;
- language arts skills--reading speed, reading comprehension, vocabulary, grammar, syntax, writing;
- high school coursework; and
- study skills and habits.

Mathematics skills. Diagnostic tests are used to determine needs. Students who demonstrate mathematics skills that are below grade level are referred to remedial mathematics. The needs assessment test also identifies the level of their placement.

Language skills. Diagnostic tests are used to determine needs. Students who have below-level language skills are placed in remedial language arts. The test determines their placement level also.

High school coursework. School records and interim teachers' reports are surveyed to determine students who have an average of "C" or below in any courses. These students are referred to the Support for High School Study component. Continuous checking is done to ensure that students are maintaining adequate averages. Students may also request assistance in any of their academic courses, and they may request help to prepare for a future course that they wish to take or are required to take for postsecondary school admission.

Study skills and habits. An inventory and/or an interview is used to test study skills competence. Students can then be referred to a core study skills

package in the Support for High School Study component; or, if they must participate in the Remedial or Support components anyway, their study skills will be taken care of there. The needs assessment results will be provided to the instructors for use in evaluation of individual student's progress and in determining additional help which may be needed for certain of the study skills.

Individual Guidance and Counseling

The Individual Guidance and Counseling component is designed to provide individual attention to students in personal, academic, and vocational areas. One can see the relationship of the objectives to this component by referring to the presentation earlier in this section. It will be noted the self-perception of ability and achievement motivation relate to both the Individual Guidance and Counseling and Personal Development components. These objectives are considered critical to a student's success. Therefore, the treatment of these is included at the individual level in Guidance and Counseling and as part of group exposure in Personal Development. It can be expected that some students will benefit from both experiences. Others may need the individual attention and interaction provided in Guidance and Counseling while others may be more independent and/or introverted and benefit more from the anonymity available in Personal Development.

Although not indicated earlier, other objectives might be addressed in Individual Guidance and Counseling. Students with special problems or who feel the need for individual attention will receive it from Guidance and Counseling. For example, a student with a particularly difficult family situation would receive personal help in counseling which would be beyond the general assistance provided in Personal Development. One other objective is shared by Guidance and Counseling and Personal Development, that of postsecondary acceptance. It was thought that beyond the general orientation and provision of information, students should have the opportunity to discuss individually the crucial topic of college options.

The Individual Guidance and Counseling component has seven objectives:

- to provide frequent counselor contact;
- to improve self-perception of ability;
- to improve behavior related to achievement motivation;
- to increase enrollment in academic curricula;
- to maintain an adequate rate of acceptance to postsecondary school;
- to reduce the interference of work;
- to maintain a low level of project delinquency; and
- to identify vision and hearing problems.

In order to meet these objectives the component should be designed to include the following:

- an individual needs assessment is required to determine students' interests, goals, and problems and to develop a plan for delivering appropriate counseling and guidance;
- based on students' future aspirations, as learned through the needs assessment, counselors will advise students in reference to adequate academic curricula and will follow up on students' progress;
- individual discussions will be held in regard to college options and students, with counselors' guidance, will select a number of candidate schools;
- community and/or institutional resources should be used to provide diagnostic health services for the identification of vision and hearing impediments to learning;
- personal counseling will be provided for special problems such as achievement motivation, self-esteem, behavioral problems, and interference of work; and
- counseling will be provided for students who engage in project-related delinquent behaviors.

All students who are project participants will be involved in the activities designed to meet the first four requirements listed above. Only students who demonstrate need will participate in activities involving the last two requirements.

Postsecondary Education Orientation

Postsecondary Education Orientation is at least implied as a necessary element for a project by the legislation and regulations. This component is intended to provide general orientation. It was designated as a separate component in order to provide flexibility in both the design of projects and the timing of the implementation of this component.

The Postsecondary Education Orientation component has two objectives:

- to maintain among partcipants an adequate rate of acceptance to post-secondary school, and
- to develop positive attitudes toward learning and further education.

All project students will participate in this component.

The component will be designed to meet the following requirements:

- general information and assistance with college admissions forms, financial aid packages, and sample entrance tests will be provided, and
- students will be oriented to college life.

Personal Development

This component was designed to meet those motivational and developmental objectives that relate generally to the target population. The component is directed toward the whole group; individual needs are met through the Individual Guidance and Counseling component. By organizing one component around the general needs of all students and another to accommodate individual problems, the use of personnel and time should be more efficient.

The Personal Development component has five objectives:

- to improve self-perception of ability;
- to improve behavior related to achievement motivation;
- to develop positive attitudes toward the project, learning, and further education;
- to develop skills enabling students to better cope with parental disinterest and the negative influence of peers and friends; and
- to develop an increased awareness of career possibilities.

All students in the project will participate in this component.

This component should be designed to include two broad categories of activities:

a. Motivational Activities

1. Self-awareness. Activities to improve self-perception of ability and achievement motivation are provided. Activities are organized around common problems. The objectives associated with this element will also be influenced by students' academic success and the results of other intervention activities.

2. Exposure to Education. Exposure to cultural and university activities is provided. This element fosters positive attitudes toward the project, learning, and further education. Exposure will also reduce effects of those students from rurally isolated regions.

b. Other Personal Development

1. Coping with Family, Friends, and Peers. Activities support students' independence and understanding of problems.

2. Career Awareness. Students are exposed to a wide range of career possibilities.

Project Management

The Project Management component is designed to enable the Project Director to implement the intervention model successfully. The component includes the following subcomponents:

Staffing. Recruitements, selection, training, and evaluation of staff members.

Student Participation. Recruitment and maintenance of records.

Project Monitoring. Assessment of student outcomes for each component, summarizing of results, and reporting of results to staff members for decision making.

Project Administration. Inaugurating the project, relations with the host institution, purchasing and control of materials, and accounting of funds.

Discussion of the Strategy

Section 155.5 of the regulations for Upward Bound specify that a project is to be composed of an academic year period and a summer period. In the latter, students are to participate for at least six weeks, preferably in residence on the campus of the host institution. Further, a subgroup of students who are of particular concern in a summer period are those students who have just graduated from high school and are at the stage where project services are directed primarily toward orientation to postsecondary education. Project services for these "Bridge students" are likely to be markedly different from summer period services for non-Bridge students. The intervention strategy previously described is discussed here with respect to three forms of services: the academic year period, the summer period, and the services for Bridge students.

Academic Year Period. During the academic year, participating students attend their respective high schools and receive project services periodically. In general, all components of the Intervention Strategy operate during the academic year, but there is a primary thrust toward the Support for High School

Study component. That is, much of the project's resources are devoted to assisting participating students with the high school courses they are currently taking. Other project components vary in the thrust of their services to reflect the differences in needs of students at various grade levels.

a. Location for Service Delivery

Project services can be provided to students at either the host institution or at the high school (or at both). To a considerable extent the location is influenced by the proximity of the students' high schools to the host institution. When high schools are close enough to the host institution that transportation of students is a negligible factor, services are best provided at the host institution. Contrarily, it is more economical to bring the services to the high schools when the distance is great, since it will be less expensive to transport the relatively small number of project staff members than to provide transportation to a large number of participating students. As much as is economically feasible, it is preferable to provide services at the host institution: needed physical resources are available, all project staff members are accessible to students, and students from different high schools can interact with one another (reducing isolation and provincialism that arise otherwise).

b. Timing and Duration of Services

Project services can be provided on weekends and during the week. Two Saturdays per month can be used, allowing students to receive project services for six hours per Saturday for a total of 12 hours per month. Weekday sessions are necessarily shorter, probably limited to one or two hours a day. If two days per week are used, a given student can receive services for as much as 12 hours per month.

c. Content of Services

The particular services offered to participating students will vary, depending on the needs of students; particularly, services will differ for students at different grade levels. While tenth, eleventh, and twelfth grade students will all have opportunities for participating

in the Support for High School Study component, other components will be offered differentially. For example, eleventh graders will receive services to assist them in making plans for postsecondary education such as discussions of options. And, eleventh graders in some locations will be assisted in preparing for Practice Scholastic Aptitude Test. On the other hand, twelfth graders will require assistance in completing college application forms and in preparing for such examinations as the Scholastic Aptitude Test.

Summer Period. In the summer period, all intervention strategy components are operational, with the major emphasis placed on Remedial Language Arts and Remedial Mathematics components. That is, the concentrated time period during the summer is most amenable to project services designed to improve the participating students' basic skill deficiencies. Project services should be designed for three consecutive summers of a given student's participation, with a continuum of services through which a student progresses.

a. First Summer

The first summer period for a student would precede the tenth-grade year in high school. During this summer students receive intensive services for basic skills development, and for career awareness and academic program planning. The Counseling and Guidance and Personal Development components are structured to initiate the student's attention to and solving of problems that have potential for reducing the likelihood of continuing with postsecondary education (e.g., self perception of ability, motivation to achieve, coping with parental disinterest).

b. Second Summer

At this point, the student has completed the tenth grade and is entering the eleventh. Project services continue to stress basic skills development and include preparation for classes to be taken the subsequent year. Students are introduced to the procedural requirements for entry into postsecondary education (e.g., selection of an institution, forms to be completed, PSE selection tests to be

taken), and continue with the Counseling and Guidance and Personal Development components as their needs dictate.

c. Third Summer

During the summer prior to the twelfth grade, students receive instruction in basic skills as needed, and prepare for classes to be taken in the twelfth grade. Second, counseling continues, dependent on the student's individual needs. Third, some options are made available to broaden the student's interests, such as the exploration of avocations (photography, drawing and painting, ceramics, etc.). As has been implied, the nature of intervention services during the third summer are tailored to the unique needs of each student.

Bridge Students. Students who have graduated from high school and are enrolled in a postsecondary institution require project services of a specialized nature. Often, students will enroll in college classes at the host institution, to provide them with the opportunity to learn the procedures for succeeding with college work. Project services are offered to assist these Bridge students with the college courses they are taking; further, any students requiring additional assistance with basic skills are given such assistance. The Guidance and Counseling component is oriented toward giving the student a last boost before beginning postsecondary education; the Personal Development component stresses survival skills for postsecondary education (e.g., how to enroll in and change classes, how to obtain financial assistance, how to locate avenues for social interactions).

POSTSECONDARY LEVEL INTERVENTION STRATEGY

The first task in developing the postsecondary level intervention strategy was to assign student objectives to program requirements described in the federal regulations for Special Services. The table on the next page summarizes the 12 objectives for postsecondary students. Portions of the appropriate section of the regulations for Special Services that outline the features of a project are quoted below.

> 157.7 "Each project...shall: develop and utilize procedures to identify and select eligible students. Such procedures shall include a comprehensive needs assessment of the individual student to determine those academic and other educational deficiencies which need to be corrected to enable that student to graduate; provide personal, career and academic counseling and guidance in those areas that affect the student's academic performance; provide remedial and other special services, such as special classes, tutoring, and educational and cultural activities that will enable project participants to compete with sufficient academic and personal skills at the institution, without creating a long-range dependency on the project; develop and utilize special curricular and instructional methods which will enable students to complete required and prerequisite courses in a reasonable period of time...Each institution...shall obtain and provide adequate financial aid for students enrolled in the project to enable them to continue their academic program...."

The student-level objectives were grouped under program requirements as follows (numbers refer to objectives in Table 3):

Academic and educational needs assessment

Objectives: 1, 2, 3, 4, 12

Personal, career, and academic guidance and counseling

Objectives: 4, 5, 6, 7, 8, 9, 10, 11

Table 3. Objectives for Disadvantaged Postsecondary Students

1.	To improve cognitive skills in mathematics and language arts.
2.	To maintain an acceptable GPA.
3.	To develop study skills and habits.
4.	To develop awareness of available fields of study (majors).
5.	To develop the ability to cope with institutional bureaucracy.
6.	To develop the ability to cope with parental disinterest.
7.	To develop positive self-perception of ability.
8.	To develop positive attitudes toward project activities, the learning process, and further education.
9.	To maintain a low level of project-related delinquent behavior.
10.	To improve motivation to achieve.
11.	To provide frequent contact with a counselor regarding education
12.	To provide assistance in obtaining financial aid.

Remedial and special services for academic and personal skills

Objectives: 1, 3

Special curricular and instructional methods for completing courses

Objective: 2

Obtain and provide adequate financial aid

Objective: 12

Since all objectives were grouped within the program requirements, this task not only provided an initial structure for the development of the intervention strategy, but also verified that the objectives were compatible with the Special Services regulations.

For the second task, the 12 objectives were again examined, this time to group them by their essential focus. Objectives that shared a common focus were grouped together to identify the major components of the intervention strategy. The following components resulted from this second analysis of objectives:

1. COUNSELING AND GUIDANCE

   Objectives: 5, 6, 7, 8, 9, 10, 11

2. SKILLS DEVELOPMENT

   Objectives: 1, 2, 3

3. CAREER PLANNING

   Objective: 4

4. FINANCIAL ASSISTANCE

   Objective: 12

5. NEEDS ASSESSMENT

   Objectives: 1, 2, 3, 4, 12

The objectives defined for disadvantaged students in postsecondary education naturally fall into two categories:

1. Improvement of the student's capacity to cope with himself, with those with whom he interacts, and with the societies in which he must function.
2. Improvement of the student's ability to accomplish his academic and educational objectives.

The postsecondary intervention strategy fulfills each of these two categories differently.

The student's capacity to cope is abetted through a comprehensive Counseling and Guidance component within which his self-perception and motivation to achieve are matured, his conflicts regarding his interactions with individuals such as his family, his peers, and those in authority are analyzed and mitigated, and his frustrations regarding the societies within which he must function are reduced through increased understanding and practical applications.

The student's ability to accomplish is enhanced through the intervention of three distinct components: Skills Development, Career Planning, and Financial Assistance. The Skills Development component improves his ability to accomplish by grounding the student in the academic basics including mathematics, language arts, and study skills. Furthermore, in order to allow this infusion of skills time to impact his academic performance, this component also provides for intensive assistance in completing current courses at an acceptable grade point average. The Career Planning component enhances his educational planning by broadening his awareness of careers and their prerequisite fields of study, thereby allowing his to chart a more precise curriculum to achieve his intended objectives. The Financial Assistance component enhances his abilities for managing his finances and in procuring the supplemental funds necessary for him to complete his education.

The objectives being addressed by the Intervention Strategy deal with the needs of disadvantaged students in the aggregate. Individual students will have differing levels and kinds of needs. A key to successful intervention, therefore, is a facility for rapidly and accurately diagnosing the particular needs of an individual student, and prescribing the kind and level of intervention that will most help in overcoming them. Since the Counseling and Guidance component is essentially interactive, it can, by its nature, determine individual needs and concentrate its attention and resources toward fulfilling them. The remaining three components--Skills Development, Career Planning, and Financial Assistance--are more clearly structured, having discrete,

tangible goals. For these three components, then, a Needs Assessment component has been defined to diagnose and prescribe specific interventions geared to achieving the student's academic and educational objectives. This Needs Assessment component feeds into the Skills Development, Career Planning, and Financial Assistance components, tailoring each student's intervention curriculum to fit his most pressing needs.

Following the identification of the five major components of the intervention strategy, the third task involved describing each component by its essential attributes. Each component received a thorough analysis to determine the particular activities a Special Services project would provide to achieve that component's objectives. The components were described in the following terms:

- Methodology for achieving the outcome.
- Duration--how long per treatment.
- Frequency--how often the treatment should be administered.
- Resources (if special).
- Outcomes to which this component would contribute.

The five components, with their inherent subcomponents, are described below.

Counseling and Guidance

There are five subcomponents that together are intended to achieve the general objective of this component. Each of these subcomponents focuses on a single aspect of the student's capacity to cope.

Subcomponent No. 1: SELF-PERCEPTION

Interactive discussion about the student's academic performance, his conclusions about its degree of success, and his perception of his potential.

Duration - Initiation, one 1-hour session. Followup monthly, one 1/2-hour session.

Frequency - Ongoing throughout the school year.

Outcomes - Improved student perception regarding his abilities and potentials.

Subcomponent No. 2: FAMILY DISINTEREST

Interactive discussion about the student and his relationship with his parents and siblings.

Duration - Initiation, one 1-hour session. Followup monthly, one 1/2 hour session.

Frequency - Ongoing through the school year.

Outcomes - Improved student perception regarding his changing relationship with his family.

Subcomponent No. 3: POSITIVE ATTITUDES

A. Briefing on project activities and objectives as they relate to the learning process. Associated briefing on the relationship between education and life styles.

Duration - One 1-hour session.

Frequency - Beginning of school year.

Outcomes - Positive attitudes towards briefing subjects.

b. Followup interviews on same subject matter.

Duration - Monthly, one 1/2-hour session.

Frequency - Ongoing throughout the school year.

Outcomes - Improved student perspectives regarding education, himself, and his objectives.

Subcomponent No. 4: DELINQUENT BEHAVIOR

A. Interactive discussion about the student's interactions with the project's activities, staff, and peers.

Duration - Initiation, 1-hour session. Followup monthly, 1/2-hour session.

Frequency - Ongoing throughout the school year.

Outcomes - Maintain cooperation and constructive behaviors toward the project.

B. Individualized problem solving related to project-related delinquent behavior.

Duration - Daily, one 1-hour session.

Frequency - Short term, up to perhaps a week, as required. (Average: 3 sessions [3 hours] per semester.)

Outcomes - Student and counselor appraisal that problem is solved.

Subcomponent No. 5: INSTITUTIONAL BUREAUCRACY

A. Seminar on institutional policies and procedures.

Duration - Five 1-hour sessions, including individual assignments.

Frequency - Beginning of school year: Registration.

Outcomes - Practical understanding of institutional policies and procedures.

Demonstrated abilities in accomplishing within the system.

B. Individualized problem solving in institutional policies and procedures.

Duration - Daily, one 1-hour session.

Frequency - Short term, up to perhaps a week, as needed. (Average: 3 sessions [3 hours] per semester.)

Outcomes - Student appraisal that problem is solved.

Skills Development

The Skills Development component shares its responsibilities for achieving the general objective with the Career Planning and Financial Assistance components. The Skills Development component contains five distinct subcomponents, each focusing on a specific ability.

Subcomponent No. 1: MATHEMATICS

Discrete units of instruction in basic computation, algebra, and plane geometry.

Duration - Weekly, at least two 1-hour sessions, plus lab assignments except during semester recess.

Frequency - Semester equivalent per unit.

Resources - Math Lab

Outcomes - Practical understanding of mathematics theories, principles, and procedures. Demonstrated skills in using mathematics.

Subcomponent No. 2: READING

Student-paced reading workshop for improvement in speed, comprehension, and vocabulary.

Duration - Weekly, at least one 1-hour session, plus individual assignments except during semester recess.

Frequency - Ongoing throughout the school year.

Resources - Reading Lab.

Outcomes - Demonstrated improvement in reading speed, comprehension, and vocabulary.

Subcomponent No. 3: GRAMMAR/SYNTAX

Discrete units of instruction in grammar and syntax: elementary, intermediate, and advanced.

Duration - Weekly, at least two 1-hour sessions except during semester recess.

Frequency - Semester equivalent per unit.

Outcomes - Practical understanding of grammar and syntax. Demonstrated improvement in writing skills.

Subcomponent No. 4: STUDY SKILLS

Working Definition: Note taking in class, and during reading and research assignments.

Problem definition for homework assignments.

Library research procedures.

Production of homework assignments:

Topic Outlining

Content Draft Writing

Draft Editing

Final Production Writing

Review procedures for quizzes and tests.

Practicum in Study Skills

Duration - Weekly, one 1-hour session, plus individual assignments except during semester recess.

Frequency - Ongoing throughout the school year.

Resources - Library

Outcomes - Demonstrated improvement in study skills.

Subcomponent No. 5: GPA PROBLEM SOLVING

Individualized problem-solving modules focused upon course requirements and content.

Duration - Daily, one 2-hour session.

Frequency - Short term; as short as two days, to perhaps as long as two weeks. (Average 9 sessions [18 hours] each semester.)

Resources - Staff knowledgeable in course subject matter.

Instructor interaction at times.

Performance contract in some cases.

Outcomes - Student appraisal that problem is solved. Instructor concurrence at times.

Career Planning

The Career Planning component contributes to the general objective along with the Skills Development and Financial Assistance components.

Practicum in careers and their academic prerequisites.

Duration - Initiation, one full day. Follow up semi-annually, one 3-hour session.

Frequency - Three times during the school year: Registration, mid-year, and spring.

Resources - Career Center, cooperation of department chairmen, cooperation of local businesses and professions.

Outcomes - Increased awareness of careers and improved planning of academic curriculum.

Financial Assistance

This is the third component involved with the general objective. The basic assumption of this component is that the student has received basic financial aid from or through the institution as a consequence of having been enrolled.

Individualized assistance in obtaining supplemental financial aid for academic and personal needs.

Duration - Unstructured time as needed over about a two-week period for each encounter. (Average 4 hours each encounter.)

Frequency - Three times during the school year: Registration, mid-year and spring.

Resources - Cooperation of institution's Financial Aid office, and Employment Office.

Outcomes - Student and counselor appraisal that financial aid is sufficient.

Improved planning of student's financial situation.

Needs Assessment

The components and subcomponents of Skills Development, Career Planning, and Financial Assistance provide a variety of interventions responding to different kinds and levels of needs. The Needs Assessment component is responsible for diagnosing and prescribing an individualized intervention curriculum so that a concentration of resources is applied to each student's most pressing needs. There are six subcomponents that together are intended to achieve the general objective for this component.

Subcomponent No. 1: BASIC SKILLS

Procedure - 1. Administer achievement tests in mathematics and language arts.

2. Diagnose needs by comparing test results with project standards.

3. Construct a basic skills intervention curriculum from project components.

Duration - One 3-hour session per semester equivalent.

Frequency - Twice during the school year: Registration, mid-year.

Outcomes - Preliminary assignment to project services based upon assessed needs.

Subcomponent No. 2: STUDY HABITS

Procedure - 1. Administer a study habits test; interview student.

2. Diagnose needs by comparing test and interview results with project standards.

3. Assign to practicum in study skills, if necessary.

Duration - One 1-hour session per semester equivalent.

Frequency - Twice during the school year: Registration, mid-year.

Outcomes - Preliminary assignment to study skills practicum, if necessary.

Subcomponent No. 3: CAREER AWARENESS

Procedure - 1. Administer worksheet for career and academic planning; interview student.

2. Diagnose needs by comparing worksheet and interview results with project standards.

3. Assign to careers practicum, if necessary.

Duration - One 1-hour session.

Frequency - Three times during the school year: Registration, mid-year, spring.

Outcomes - Assignment to careers practicum, if necessary.

Subcomponent No. 4: FINANCIAL SITUATION

Procedure - 1. Administer financial aid worksheet; interview student.

2. Diagnose needs by comparing worksheet and interview results with project standards.

3. Assign to Financial Assistance component, if necessary.

Duration - Initiation, one 2-hour session. Followup, 1-hour sessions.

Frequency - Three times during the school year: Registration, mid-year, spring

Outcomes - Assignment to Financial Assistance component, if necessary.

Subcomponent No. 5: ACADEMIC INTERVENTION CURRICULUM

Procedure - 1. Integrate the preliminary assignments from basic skills and study habits assessments.

2. Discuss with student the proposed intervention curriculum in relation to his academic curriculum, his available time and his abilities.

3. Construct and prescribe an intervention curriculum that concentrates upon his most pressing needs.

Duration - One 1-hour session.

Frequency - Twice during school year: Registration, mid-year.

Outcomes - Assignment to an individualized intervention curriculum.

Subcomponent No. 6: ACCEPTABLE GPA

Procedure - 1. Analyze school records of past and current performance; interview student.

2. Diagnose needs by comparing performance and interview results with project standards.

3. Assign to one or more modules in the GPA problem solving subcomponent, as necessary.

Duration - One 1-hour session per semester equivalent.

Frequency - Twice during the school year, at the semester midterm; and as requested by the student and/or instructor.

Outcomes - Assignment to the GPA problem solving subcomponent, as necessary.

Validation

A general assessment of the validity of this strategy as an intervention was accomplished by tabulating the duration and frequency of the components. The assessment disclosed a 31-hour average per month with a fairly even distribution for maximum participation by a student. This level of concentration is clearly within the boundaries of an intervention and could be expended for certain model solutions without overtaxing some of the students. The tabulation as a two-dimensional summary of the Postsecondary Education intervention strategy, is shown on the following page.

Table 4: Duration and Frequency of PSE intervention Strategy

COMPONENT/SUBCOMPONENT	REGIS-TRATION	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	TOTAL HOURS
ACADEMIC NEEDS ASSESSMENT:											(10)
BASIC SKILLS ASSESSMENT	3					3					6
GPA ASSESSMENT				1				1			2
STUDY SKILLS ASSESSMENT	1					1					2
EDUCATIONAL NEEDS ASSESSMENT:											(7)
CAREERS ASSESSMENT	1					1			1		3
FINANCIAL ASSESSMENT	2					1			1		4
ACADEMIC SKILLS SERVICES:											(160+)
MATHEMATICS INSTRUCTION		8+	8+	8+	8+		8+	8+	8+	8+	64+
GRAMMAR/SYNTAX INSTRUCTION		8	8	8	8		8	8	8	8	64
READING WORKSHOP		4+	4+	4+	4+		4+	4+	4+	4+	32+
PERSONAL SKILLS SERVICES:											(32+)
STUDY SKILLS PRACTICUM		4+	4+	4+	4+		4+	4+	4+	4+	32+
COURSE COMPLETION SERVICES:											(36a)
GPA PROBLEM SOLVING				6a	6a	6a		6a	6a	6a	36a
ACADEMIC COUNSELING:											(16.5+a)
PROCEDURES SEMINAR	5+										5+
PROCEDURES PROBLEM SOLVING		3a					3a				6a
PROJECT BRIEFING AND FOLLOWUP	1	.5	.5	.5	.5	.5	.5	.5	.5	.5	5.5
PERSONAL COUNSELING:											(22.5a)
FAMILY DISINTEREST DISCUSSION	1	.5	.5	.5	.5	.5	.5	.5	.5	.5	5.5
SELF-PERCEPTION DISCUSSION	1	.5	.5	.5	.5	.5	.5	.5	.5	.5	5.5
BEHAVIORS DISCUSSION	1	.5	.5	.5	.5	.5	.5	.5	.5	.5	5.5
DELINQUENCY PROBLEM SOLVING			3a				3a				6a
CAREER PLANNING:											(12)
CAREERS PRACTICUM	6					3				3	12
FINANCIAL SITUATION:											(12a)
FINANCIAL ASSISTANCE	4a					4a			4a		12a
TOTAL HOURS FOR MAXIMUM PARTICIPATION:	26+ a	29+ a	29+ a	33+ a	32+ a	21a	32+ a	33+ a	38+ a	35+ a	(308+) a

LEGEND: + means additional time will be spent on individual assignments.
a means average duration and placement.
( ) indicates component totals and overall total.

USES FOR THE INTERVENTION STRATEGIES

The two intervention strategies developed by SDC have at least four potential uses in the field of compensatory education for older students. Some of these uses were mentioned in the Introduction to this report, and are elaborated here.

DEVELOPING A NEW PROJECT

It can be expected that institutions not now operating an Upward Bound or a Special Services project will become interested in doing so in the future. Personnel at such institutions would find the appropriate intervention strategy particularly useful in designing their projects. Further, local school districts and state agencies concerned with the education of disadvantaged high school and college youth are increasingly interested in developing compensatory projects to be supported with their own funds; these groups would also find the intervention strategies helpful in designing a project (to the extent that their objectives coincide with those of Upward Bound and Special Services). Either of these two types of new projects--those funded by the Special Programs for Disadvantaged Students or those supported by district and/or state funds--would also find the Index of Project Components prepared by SDC and documented elsewhere beneficial in determining specific project activities related to the components of the two intervention strategies.

MODIFYING AN EXISTING PROJECT

Project personnel operating an Upward Bound or a Special Services project often have reported that they are interested in modifying their projects to improve the services offered to students. Directors of existing projects requesting assistance in making modifications would profit from having the relevant intervention strategy available as a reference for deciding on the possible ways of altering their projects. Again, the Index of Project Components would serve as a useful adjunct to an intervention strategy.

DEVELOPING THEORY-BASED MODELS

One possible solution to the dissatisfaction with the level of student accomplishments from compensatory intervention programs is the development of new models derived from theories of educational attainment. (Indeed, this was the original focus of the Planned Variations Study.) Should this solution receive further consideration in the future, developers of theory-based models would find the intervention strategies especially valuable as a means for determining how to apply theories to the needs of disadvantaged students. That is, model developers could use the intervention strategies as a framework against which to apply a given theory of educational attainment; by doing so, the model developer can be assured that (1) regulatory restrictions are not exceeded, and (2) a comprehensive model addressing all student needs will emerge.

EVALUATING INTERVENTION PROGRAMS

The U.S. Office of Education undoubtedly will be conducting further evaluations of Upward Bound and Special Services. These evaluations may be conducted through the collection of data from projects, reported to USOE and analyzed by USOE personnel, or through contracts with outside evaluation organizations. In either case, the two intervention strategies prepared by SDC can form a basis for the structure of the evaluations, since the strategies outline the particular aspects of an intervention program for which evaluative evidence should be collected.